

Sub C¹

CLAIMS

Apparatus for switching data from any of a plurality of inputs to any of a plurality of outputs, comprising:
apparatus for receiving a plurality of input bit packs organized in a combination of input data rails and time slots,
apparatus for selecting one of the input bit packs from one of the rails in one of the time slots, and
apparatus for conveying said selected bit pack to an output data position within a combination of output data rails and time slots.

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- 1 2. Apparatus of claim 1, wherein each bit pack is one bit wide.
- 1 3. Apparatus of claim 1, wherein said apparatus for receiving, selecting, and conveying a plurality of bit packs is configured for selecting a plurality of input bit packs for output in a plurality of output data positions.
- 1 4. Apparatus of claim 1, wherein said apparatus for receiving, selecting, and conveying a plurality of bit packs is configured for selecting a single bit pack for output in a plurality of output positions.

Apparatus for switching data from any of N input positions arranged as T time slots on R rails to any of M output positions arranged as T2 time slots on R2 rails, comprising:
apparatus for receiving input data arranged as bit packs in T time slots on R rails,
apparatus for selecting data from one of the R rails and latching the selected data during a predetermined time slot to thereby select a bit pack of predetermined R and T values, and

8 apparatus for conveying said selected bit pack to an output position of
9 predetermined R2 and T2 values.

1 6. Apparatus for switching data from any of N input positions arranged as T time slots
2 on R rails to any of M output positions arranged as T2 time slots on R2 rails,
3 comprising:

4 M selection blocks, each configured to select a bit pack for a different one of the
5 output positions, and each block including:

6 apparatus for receiving input data arranged as bit packs in T time slots on R
7 rails,

8 apparatus for selecting data from one of the R rails and latching the selected
9 data during a predetermined time slot to thereby select a bit pack of predetermined
10 R and T values, and

11 apparatus for conveying said selected bit pack to an output position of
12 predetermined T2 and R2 values.

1 7. Apparatus of claim 6 further comprising:

2 a T2 X R2 output bit map configured for receiving a selected bit pack in each
3 location from a different one of the M selection blocks.

1 8. Apparatus of claim 7 further comprising:

2 a second T2 X R2 output bit map configured to be loaded in parallel from the first
3 output bit map.

1 9. Apparatus of claim 8 further comprising:

2 apparatus configured to arrange input bit packs as an array of T time slots on R
3 rails and to convey output bit packs from the second T2 X R2 bit map on R2 rails
4 in T2 time slots.

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1 10. Apparatus of claim 9 wherein N = M = 768.

2 11. Apparatus for switching data from any of N input positions arranged as T time slots on R rails to any of M output positions arranged as T2 time slots on R2 rails, comprising:
3 R2 selection blocks, each configured to select a bit pack for a different one of the output positions, and each block including:
4 apparatus for receiving input data arranged as bit packs on N rails,
5 apparatus for selecting data from one of the N rails, and
6 apparatus for conveying said selected bit pack to an output position of predetermined T2 and R2 values.

1 12. Apparatus of claim 11 further comprising:
2 a T X R input bit map configured for receiving a selected bit pack in each location
3 from a different one of the N space/time input positions.

1 13. Apparatus of claim 12 further comprising:
2 a second T X R input bit map configured to be loaded in parallel from the first input
3 bit map and to convey N input bit packs to each of the R2 selection blocks and to hold the N input bit packs available to the R2 selection blocks during T2 time slots.
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1 14. Apparatus of claim 10 further comprising:
2 apparatus configured to arrange input bit packs as an array of T time slots on R rails and to convey output bit packs from the second T2 X R2 bit map on R2 rails in T2 time slots.
3

1 15. Apparatus of claim 14 wherein N = M = 768.

(b)

1 16. A method of switching data from any of N input positions arranged as T time slots
2 on R rails to any of M output positions arranged as T2 time slots on R2 rails,
3 comprising the steps of :
4 (a) in each of R2 selection blocks, selecting a bit pack for a different one of the
5 output positions, and
6 (b) conveying each of the bit packs selected in step (a) to the associated one of
7 the output positions.

1 17. The method of claim 16 wherein step (a) comprises the further step of :
2 (c) receiving input data arranged as bit packs on N rails.

Subject
Step 2

1 18. The method of claim 17 wherein step (a) comprises the further step of:
2 (d) selecting a bit pack from one of the N rails.

1 19. The method of claim 18 wherein step a comprises the further step of:
2 (e) conveying said selected bit pack to an output position of predetermined T2
3 and R2 values.

1 20. A method of switching data from any of N input positions arranged as T time slots
2 on R rails to any of M output positions arranged as T2 time slots on R2 rails,
3 comprising the steps of :
4 (a) in each of M selection blocks, selecting a bit pack for a different one of the
5 output positions, and
6 (b) conveying each of the bit packs selected in step (a) to the associated one of
7 the output positions.

Subject
Step 1
Step 2

1 21. The method of claim 20 wherein step (a) further comprises the steps of:
2 (c) receiving input data arranged as bit packs in T time slots on R rails, and

3 (d) selecting data from one of the R rails and latching the selected data during a
4 predetermined time slot to thereby select a bit pack of predetermined R and T
5 values.

1 22. The method of claim 21 wherein step (b) further comprises the step of:
2 (e) conveying said selected bit pack to an output position of predetermined T2
3 and R2 values.